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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,503	06/22/2006	Roland Mattheus Van Der Tuyn	FR030167US1	4584
25235 7590 07/14/2011 HOGAN LOVELLS US LLP ONE TABOR CENTER, SUITE 1500 1200 SEVENTEENTH ST DENVER, CO 80202				
EXAMINER				
FILE, ERIN M				
ART UNIT		PAPER NUMBER		
2611				
NOTIFICATION DATE		DELIVERY MODE		
07/14/2011		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patent.colorado@hoganlovells.com

**Office Action Summary****Application No.**

10/584,503

**Applicant(s)**

VAN DER TUIJN ET AL.

**Examiner**

ERIN FILE

**Art Unit**

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 March 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-940)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over 6,272,102 ("*Kahlman*") in view of *Atzenbeck*, U.S. Patent No. US 3,310,751.

Regarding claim 1, *Kalman* discloses a method of generating an adaptive slicer threshold from a received demodulated signal, the method comprising the steps of: detecting a plurality of maximum values of the signal over a predetermined period, for at least two periods (col. 3, lines 43-46, *[t]he outputs of the two memory loops provide the average maximum level T.sub.gem during each clock period and the average minimum level B.sub.gem*); storing said detected maximum values (col. 3, lines 43-46, *[t]he outputs of the two memory loops provide the average maximum level T.sub.gem during each clock period and the average minimum level B.sub.gem*); detecting a plurality of minimum values of the signal over a predetermined period, for at least two periods (col. 3, lines 43-46, *[t]he outputs of the two memory loops provide the average maximum level T.sub.gem during each clock period and the average minimum level B.sub.gem*);

storing said detected minimum values (col. 3, lines 43-46, [t]he outputs of the two memory loops provide the average maximum level  $T_{sub.gem}$  during each clock period and the average minimum level  $B_{sub.gem}$ ); averaging a select number of the plurality of stored maximum values and averaging a select number of the plurality of stored minimum values (col. 5, lines 55-62 [t]he output signal from this integrator is a signal  $a$  which is larger than 0 and is the average value of the data signal. In the multiplier 19, the signal  $\alpha$  is multiplied by the signal  $T$ , and subsequently, the signal  $\alpha \cdot T$  is added to the signal  $B$  in the summing circuit 20. The output signal from the summing circuit 20 is thus equal to  $\alpha \cdot T + B$  and this signal is applied as threshold voltage  $U_{sub.th}$  to the second input of the slicer 16); and calculating the slicer threshold from the average minimum and maximum values (col. 5, lines 55-62 [t]he output signal from this integrator is a signal  $a$  which is larger than 0 and is the average value of the data signal. In the multiplier 19, the signal  $\alpha$  is multiplied by the signal  $T$ , and subsequently, the signal  $\alpha \cdot T$  is added to the signal  $B$  in the summing circuit 20. The output signal from the summing circuit 20 is thus equal to  $\alpha \cdot T + B$  and this signal is applied as threshold voltage  $U_{sub.th}$  to the second input of the slicer 16).

Kalman fails to explicitly disclose storing said detected minimum/maximum values only upon occurrence of a bit level change. However, in a similar field of endeavor, Atzenbeck discloses storing said detected minimum/maximum values only upon occurrence of a bit level change (col. 7, lines 20-31). Further, the storage of detected changed only upon level bit changes would have the advantage of saving power and processing by not continuously storing values. Therefore, for at least this

reason, it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the above-mentioned elements of *Atzenbeck* into the disclosure of *Kalman*.

Regarding claim 2, *Kahlman* discloses the averages of the maximum and minimum values are calculated using a running average (col. 3, lines 43-46, *[t]he outputs of the two memory loops provide the average maximum level T.sub.gem during each clock period and the average minimum level B.sub.gem*). *Kahlman* fails to explicitly disclose  $n$  last successive selected maximum or minimum values,  $n$  being a predetermined integer greater than 1. However, the selection of a value represents an obvious choice from a finite number of possible solutions and would have been obvious to one of ordinary skill in the art at the time of invention to select such values to achieve the elements recited in claim 1.

Regarding claims 3 and 4, *Kahlman* fails to explicitly disclose that  $n$  ranges from 2 to 6 or that  $n$  is equal to 4. However, the selection of the values ranging between 2 and 6 or the value of 4 represents an obvious choice from a finite number of possible solutions and would have been obvious to one of ordinary skill in the art at the time of invention to select such values to achieve the elements recited in claims 3 and 4.

Regarding claim 8, the combination of *Kahlman* and *Atzenbeck* discloses the elements recited in claim 8 for at least the reasons disclosed in claim 1 above.

Regarding claim 9, *Kahlman* discloses at least one memory to store said several maximum values and said several minimum values to be averaged. *Kahlman* fails to explicitly disclose the memory is FIFO, however, such a memory represents an obvious

choice from a finite number of possible solutions and would have been obvious to one of ordinary skill in the art at the time of invention to select such a type of memory to achieve the elements recited in claim 9.

Regarding claim 10, *Kahlman* discloses the first and/or second detectors are a maximum peak detector and a minimum peak detector, respectively (col. 2, lines 40-45).

Regarding claim 11, *Kahlman* discloses the system comprises a bit level detector associated with said at least one memory in order to activate the storage of a new minimum or maximum value only if a bit level change has been detected (col. 3, lines 51-57).

4. Claims 5-7 rejected under 35 U.S.C. 103(a) as being unpatentable over *Kahlman* and *Atzenbeck* as applied to claim 1 above, and further in view of *Lavrenov*, GB 1,566,169.

Regarding claim 5, Little teaches the method according to claim 1, wherein the step of detecting a maximum value comprises the operations of: detecting a maximum peak of the signal during the predetermined period (col. 3, lines 43-46, *[t]he outputs of the two memory loops provide the average maximum level T.sub.gem during each clock period and the average minimum level B.sub.gem*), ..., and holding the value of the detected maximum peak as the maximum value over the predetermined period (col. 2, lines 36-39). *Kahlman* does not teach the maximum signal peak corresponding to a point where the signal first-order derivative is zero and the signal second-order derivative has a negative value.

However, *Lavrenov* teaches the maximum signal peak corresponding to a point where the signal first-order derivative is zero and the signal second-order derivative has a negative value (Fig. 2; page 5, lines 24-31: "As this takes place, the second order derivative changes from positive to negative at the point corresponding to the maximum value of the first derivative. When the first order derivative reaches zero (region C), the stage of complete charging is indicated and the storage battery is disconnected from the charging current supply means."). It would have been obvious to one of ordinary skill in the art at the time of the invention to recognize the application of the signal maximum locating technique of *Lavrenov* to the slice threshold detector of Little modified so that the maximum of each "1" bit can be detected accurately by the slice detector.

Regarding claim 6, *Kahlman* teaches wherein the step of determining the minimum value comprises the operations of: detecting a minimum peak of the signal during the predetermined period (col. 3, lines 43-46, *[t]he outputs of the two memory loops provide the average maximum level T.sub.gem during each clock period and the average minimum level B.sub.gem*) and holding the value of the detected minimum peak as the minimum value over the predetermined period (col. 2, lines 36-39). *Kahlman* does not teach the minimum signal peak corresponding to a point where the signal first-order derivative is zero and where the signal second-order derivative has a positive value.

However, *Lavrenov* teaches the minimum signal peak corresponding to a point where the signal first-order derivative is zero and where the signal second-order derivative has a positive value (Fig. 2; page 5, lines 24-31: "As this takes place, the

second order derivative changes from positive to negative at the point corresponding to the maximum value of the first derivative. When the first order Application/Control Number: 10/584,503 Page 12 Art Unit: 2629 derivative reaches zero (region C), the stage of complete charging is indicated and the storage battery is disconnected from the charging current supply means." One of ordinary skill in the art would appreciate that to find the minimum rather than the maximum, the first order derivative would also be zero and the second order derivative would change from negative to positive). It would have been obvious to one of ordinary skill in the art at the time of the invention to recognize the application of the signal maximum locating technique of *Lavrenov* to the slice threshold detector of Little modified so that the maximum of each "1" bit can be detected accurately by the slice detector.

As per claim 7, *Kahlman* teaches wherein a new detected maximum value is used to calculate the average maximum value only if a minimum peak has been detected during the previous predetermined period (col. 2, lines 36-47), and a new detected minimum value is used to calculate the average minimum value only if a maximum peak has been detected during the previous predetermined period (col. 2, lines 36-47).

### ***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIN FILE whose telephone number is (571)272-3236. The examiner can normally be reached on Monday - Friday 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on (571)272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Erin M. File/  
Examiner, Art Unit 2611

/Dac V. Ha/  
for David Payne, SPE of Art Unit 2611